

SEQUENCE LISTING

<110> Chen, Bao-Lu
 Hurst, Deborah
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 Long, Li
 Lu, Xiaofeng
 Luqman, Mohammad
 Yabannavar, Asha
 Zaror, Isabel

<120> Antagonist Anti-CD40 Monoclonal
 Antibodies and Methods for Their Use

<130> PP20107.004 (282916)

<150> 60/565,710

<151> 2004-04-27

<150> 60/525,579

<151> 2003-11-26

<150> 60/517,337

<151> 2003-11-04

<160> 12

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 720

<212> DNA

<213> Artificial Sequence

<220>

<223> Coding sequence for light chain of 12.12 human
 anti-CD40 antibody

<221> CDS

<222> (1)...(720)

<400> 1

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Met	Ala	Leu	Pro	Ala	Gln	Leu	Leu	Gly	Leu	Leu	Met	Leu	Trp	Val	Ser	
1				5				10						15		

gga	tcc	agt	ggg	gat	att	gtg	atg	act	cag	tct	cca	ctc	tcc	ctg	acc	96
Gly	Ser	Ser	Gly	Asp	Ile	Val	Met	Thr	Gln	Ser	Pro	Leu	Ser	Leu	Thr	
			20					25					30			

gtc	acc	cct	gga	gag	ccg	gcc	tcc	atc	tcc	tgc	agg	tcc	agt	cag	agc	144
Val	Thr	Pro	Gly	Glu	Pro	Ala	Ser	Ile	Ser	Cys	Arg	Ser	Ser	Gln	Ser	
		35					40					45				

ctc	ctg	tat	agt	aat	gga	tac	aac	tat	ttg	gat	tgg	tac	ctg	cag	aag	192
Leu	Leu	Tyr	Ser	Asn	Gly	Tyr	Asn	Tyr	Leu	Asp	Trp	Tyr	Leu	Gln	Lys	
	50					55					60					

cca	ggg	cag	tct	cca	cag	gtc	ctg	atc	tct	ttg	ggg	tct	aat	cgg	gcc	240
Pro	Gly	Gln	Ser	Pro	Gln	Val	Leu	Ile	Ser	Leu	Gly	Ser	Asn	Arg	Ala	
65					70					75					80	

tcc	ggg	gtc	cct	gac	agg	ttc	agt	ggc	agt	gga	tca	ggc	aca	gat	ttt	288
Ser	Gly	Val	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser	Gly	Thr	Asp	Phe	

85										90					95					
aca	ctg	aaa	atc	agc	aga	gtg	gag	gct	gag	gat	gtt	ggg	gtt	tat	tac	336				
Thr	Leu	Lys	Ile	Ser	Arg	Val	Glu	Ala	Glu	Asp	Val	Gly	Val	Tyr	Tyr					
			100					105					110							
tgc	atg	caa	gct	cga	caa	act	cca	ttc	act	ttc	ggc	cct	ggg	acc	aaa	384				
Cys	Met	Gln	Ala	Arg	Gln	Thr	Pro	Phe	Thr	Phe	Gly	Pro	Gly	Thr	Lys					
		115					120					125								
gtg	gat	atc	aga	cga	act	gtg	gct	gca	cca	tct	gtc	ttc	atc	ttc	ccg	432				
Val	Asp	Ile	Arg	Arg	Thr	Val	Ala	Ala	Pro	Ser	Val	Phe	Ile	Phe	Pro					
		130				135					140									
cca	tct	gat	gag	cag	ttg	aaa	tct	gga	act	gcc	tct	gtt	gtg	tgc	ctg	480				
Pro	Ser	Asp	Glu	Gln	Leu	Lys	Ser	Gly	Thr	Ala	Ser	Val	Val	Cys	Leu					
145					150				155						160					
ctg	aat	aac	ttc	tat	ccc	aga	gag	gcc	aaa	gta	cag	tgg	aag	gtg	gat	528				
Leu	Asn	Asn	Phe	Tyr	Pro	Arg	Glu	Ala	Lys	Val	Gln	Trp	Lys	Val	Asp					
			165					170						175						
aac	gcc	ctc	caa	tcg	ggg	aac	tcc	cag	gag	agt	gtc	aca	gag	cag	gac	576				
Asn	Ala	Leu	Gln	Ser	Gly	Asn	Ser	Gln	Glu	Ser	Val	Thr	Glu	Gln	Asp					
		180						185					190							
agc	aag	gac	agc	acc	tac	agc	ctc	agc	agc	acc	ctg	acg	ctg	agc	aaa	624				
Ser	Lys	Asp	Ser	Thr	Tyr	Ser	Leu	Ser	Ser	Thr	Leu	Thr	Leu	Ser	Lys					
		195					200					205								
gca	gac	tac	gag	aaa	cac	aaa	gtc	tac	gcc	tgc	gaa	gtc	acc	cat	cag	672				
Ala	Asp	Tyr	Glu	Lys	His	Lys	Val	Tyr	Ala	Cys	Glu	Val	Thr	His	Gln					
		210				215					220									
ggc	ctg	agc	tcg	ccc	gtc	aca	aag	agc	ttc	aac	agg	gga	gag	tgt	tag	720				
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<210> 2

<211> 239

<212> PRT

<213> Artificial Sequence

<220>

<223> Light chain of 12.12 human anti-CD40 antibody

<400> 2

Met	Ala	Leu	Pro	Ala	Gln	Leu	Leu	Gly	Leu	Leu	Met	Leu	Trp	Val	Ser
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Gly	Ser	Ser	Gly	Asp	Ile	Val	Met	Thr	Gln	Ser	Pro	Leu	Ser	Leu	Thr
			20					25					30		
Val	Thr	Pro	Gly	Glu	Pro	Ala	Ser	Ile	Ser	Cys	Arg	Ser	Ser	Gln	Ser
		35				40					45				
Leu	Leu	Tyr	Ser	Asn	Gly	Tyr	Asn	Tyr	Leu	Asp	Trp	Tyr	Leu	Gln	Lys
50				55				60							
Pro	Gly	Gln	Ser	Pro	Gln	Val	Leu	Ile	Ser	Leu	Gly	Ser	Asn	Arg	Ala
65				70				75					80		
Ser	Gly	Val	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser	Gly	Thr	Asp	Phe
			85					90					95		
Thr	Leu	Lys	Ile	Ser	Arg	Val	Glu	Ala	Glu	Asp	Val	Gly	Val	Tyr	Tyr
			100				105						110		
Cys	Met	Gln	Ala	Arg	Gln	Thr	Pro	Phe	Thr	Phe	Gly	Pro	Gly	Thr	Lys
		115				120					125				
Val	Asp	Ile	Arg	Arg	Thr	Val	Ala	Ala	Pro	Ser	Val	Phe	Ile	Phe	Pro

130	135	140
Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu		
145	150	155
Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp		160
	165	170
Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp		175
	180	185
Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys		190
	195	200
Ala Asp Tyr Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln		205
	210	215
Gly Leu Ser Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys		220
225	230	235

<210> 3

<211> 2016

<212> DNA

<213> Artificial Sequence

<220>

<223> Coding sequence for heavy chain of 12.12 human
anti-CD40 antibody (with introns)

<400> 3

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cct ggg agg tcc ctg aga ctc tcc tgt gca gcc tct gga ttc acc ttc 144
agt agc tat ggc atg cac tgg gtc cgc cag gct cca ggc aag ggg ctg 192
gag tgg gtg gca gtt ata tca tat gag gaa agt aat aga tac cat gca 240
gac tcc gtg aag ggc cga ttc acc atc tcc aga gac aat tcc aag atc 288
acg ctg tat ctg caa atg aac agc ctc aga act gag gac acg gct gtg 336
tat tac tgt gcg aga gat ggg ggt ata gca gca cct ggg cct gac tac 384
tgg ggc cag gga acc ctg gtc acc gtc tcc tca gca agt acc aag ggc 432
cca tcc gtc ttc ccc ctg gcg ccc gct agc aag agc acc tct ggg ggc 480
aca gcg gcc ctg ggc tgc ctg gtc aag gac tac ttc ccc gaa ccg gtg 528
acg gtg tgc tgg aac tca ggc gcc ctg acc agc ggc gtg cac acc ttc 576
ccg gct gtc cta cag tcc tca gga ctc tac tcc ctc agc agc gtg gtg 624
acc gtg ccc tcc agc agc ttg ggc acc cag acc tac atc tgc aac gtg 672
aat cac aag ccc agc aac acc aag gtg gac aag aga gtt ggt gag agg 720
cca gca cag gga ggg agg gtg tct gct gga agc cag gct cag cgc tcc 768
tgc ctg gac gca tcc cgg cta tgc agt ccc agt cca ggg cag caa ggc 816
agg ccc cgt ctg cct ctt cac ccg gag gcc tct gcc cgc ccc act cat 864
gct cag gga gag ggt ctt ctg gct ttt tcc cca ggc tct ggg cag gca 912
cag gct agg tgc ccc taa ccc agg ccc tgc aca caa agg ggc agg tgc 960
tgg gct cag acc tgc caa gag cca tat ccg gga gga ccc tgc ccc tga 1008
cct aag ccc acc cca aag gcc aaa ctc tcc act ccc tca gct cgg aca 1056
cct tct ctc ctc cca gat tcc agt aac tcc caa tct tct ctc tgc aga 1104
gcc caa atc ttg tga caa aac tca cac atg ccc acc gtg ccc agg taa 1152
gcc agc cca ggc ctc gcc ctc cag ctc aag gcg gga cag gtg ccc tag 1200
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cct cca tct ctt cct cag cac ctg aac tcc tgg ggg gac cgt cag tct 1296
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caa agc cgc ggg agg agc agt aca aca gca cgt acc gtg tgg tca gcg 1488
tcc tca ccg tcc tgc acc agg act ggc tga atg gca agg agt aca agt 1536
gca agg tct cca aca aag ccc tcc cag ccc cca tgc aga aaa cca tct 1584
cca aag cca aag gtg gga ccc gtg ggg tgc gag ggc cac atg gac aga 1632
ggc cgg ctc ggc cca ccc tct gcc ctg aga gtg acc gct gta cca acc 1680
tct gtc cct aca ggg cag ccc cga gaa cca cag gtg tac acc ctg ccc 1728
cca tcc cgg gag gag atg acc aag aac cag gtc agc ctg acc tgc ctg 1776
gtc aaa ggc ttc tat ccc agc gac atc gcc gtg gag tgg gag agc aat 1824
ggg cag ccg gag aac aac tac aag acc acg cct ccc gtg ctg gac tcc 1872
gac ggc tcc ttc ttc ctc tat agc aag ctc acc gtg gac aag agc agg 1920
tgg cag cag ggg aac gtc ttc tca tgc tcc gtg atg cat gag gct ctg 1968

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<210> 4

<211> 469

<212> PRT

<213> Artificial Sequence

<220>

<223> Heavy chain of 12.12 human anti-CD40 antibody

<400> 4

Met	Glu	Phe	Gly	Leu	Ser	Trp	Val	Phe	Leu	Val	Ala	Ile	Leu	Arg	Gly	1	5	10	15
Val	Gln	Cys	Gln	Val	Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Val	Val	Gln	20	25	30	
Pro	Gly	Arg	Ser	Leu	Arg	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	35	40	45	
Ser	Ser	Tyr	Gly	Met	His	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	50	55	60	
Glu	Trp	Val	Ala	Val	Ile	Ser	Tyr	Glu	Glu	Ser	Asn	Arg	Tyr	His	Ala	65	70	75	80
Asp	Ser	Val	Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn	Ser	Lys	Ile	85	90	95	
Thr	Leu	Tyr	Leu	Gln	Met	Asn	Ser	Leu	Arg	Thr	Glu	Asp	Thr	Ala	Val	100	105	110	
Tyr	Tyr	Cys	Ala	Arg	Asp	Gly	Gly	Ile	Ala	Ala	Pro	Gly	Pro	Asp	Tyr	115	120	125	
Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Ala	Ser	Thr	Lys	Gly	130	135	140	
Pro	Ser	Val	Phe	Pro	Leu	Ala	Pro	Ala	Ser	Lys	Ser	Thr	Ser	Gly	Gly	145	150	155	160
Thr	Ala	Ala	Leu	Gly	Cys	Leu	Val	Lys	Asp	Tyr	Phe	Pro	Glu	Pro	Val	165	170	175	
Thr	Val	Ser	Trp	Asn	Ser	Gly	Ala	Leu	Thr	Ser	Gly	Val	His	Thr	Phe	180	185	190	
Pro	Ala	Val	Leu	Gln	Ser	Ser	Gly	Leu	Tyr	Ser	Leu	Ser	Ser	Val	Val	195	200	205	
Thr	Val	Pro	Ser	Ser	Ser	Leu	Gly	Thr	Gln	Thr	Tyr	Ile	Cys	Asn	Val	210	215	220	
Asn	His	Lys	Pro	Ser	Asn	Thr	Lys	Val	Asp	Lys	Arg	Val	Glu	Pro	Lys	225	230	235	240
Ser	Cys	Asp	Lys	Thr	His	Thr	Cys	Pro	Pro	Cys	Pro	Ala	Pro	Glu	Leu	245	250	255	
Leu	Gly	Gly	Pro	Ser	Val	Phe	Leu	Phe	Pro	Pro	Lys	Pro	Lys	Asp	Thr	260	265	270	
Leu	Met	Ile	Ser	Arg	Thr	Pro	Glu	Val	Thr	Cys	Val	Val	Val	Asp	Val	275	280	285	
Ser	His	Glu	Asp	Pro	Glu	Val	Lys	Phe	Asn	Trp	Tyr	Val	Asp	Gly	Val	290	295	300	
Glu	Val	His	Asn	Ala	Lys	Thr	Lys	Pro	Arg	Glu	Glu	Gln	Tyr	Asn	Ser	305	310	315	320
Thr	Tyr	Arg	Val	Val	Ser	Val	Leu	Thr	Val	Leu	His	Gln	Asp	Trp	Leu	325	330	335	
Asn	Gly	Lys	Glu	Tyr	Lys	Cys	Lys	Val	Ser	Asn	Lys	Ala	Leu	Pro	Ala	340	345	350	
Pro	Ile	Glu	Lys	Thr	Ile	Ser	Lys	Ala	Lys	Gly	Gln	Pro	Arg	Glu	Pro	355	360	365	
Gln	Val	Tyr	Thr	Leu	Pro	Pro	Ser	Arg	Glu	Glu	Met	Thr	Lys	Asn	Gln	370	375	380	
Val	Ser	Leu	Thr	Cys	Leu	Val	Lys	Gly	Phe	Tyr	Pro	Ser	Asp	Ile	Ala	385	390	395	400
Val	Glu	Trp	Glu	Ser	Asn	Gly	Gln	Pro	Glu	Asn	Asn	Tyr	Lys	Thr	Thr	405	410	415	
Pro	Pro	Val	Leu	Asp	Ser	Asp	Gly	Ser	Phe	Phe	Leu	Tyr	Ser	Lys	Leu	420	425	430	

Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser
 435 440 445
 Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
 450 455 460
 Leu Ser Pro Gly Lys
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<210> 5
 <211> 469
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Heavy chain of variant of 12.12 human anti-CD40
 antibody

<400> 5
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 Val Gln Cys Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln
 20 25 30
 Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
 35 40 45
 Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
 50 55 60
 Glu Trp Val Ala Val Ile Ser Tyr Glu Glu Ser Asn Arg Tyr His Ala
 65 70 75 80
 Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Ile
 85 90 95
 Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Thr Glu Asp Thr Ala Val
 100 105 110
 Tyr Tyr Cys Ala Arg Asp Gly Gly Ile Ala Ala Pro Gly Pro Asp Tyr
 115 120 125
 Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly
 130 135 140
 Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly
 145 150 155 160
 Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val
 165 170 175
 Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe
 180 185 190
 Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val
 195 200 205
 Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val
 210 215 220
 Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Pro Lys
 225 230 235 240
 Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu
 245 250 255
 Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr
 260 265 270
 Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val
 275 280 285
 Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val
 290 295 300
 Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Tyr Asn Ser
 305 310 315 320
 Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu
 325 330 335
 Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala
 340 345 350
 Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro
 355 360 365
 Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln
 370 375 380

Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala
 385 390 395 400
 Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
 405 410 415
 Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu
 420 425 430
 Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser
 435 440 445
 Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
 450 455 460
 Leu Ser Pro Gly Lys
 465

<210> 6
 <211> 239
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Light chain of 5.9 human anti-CD40 antibody

<400> 6
 Met Ala Leu Leu Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Pro
 1 5 10 15
 Gly Ser Ser Gly Ala Ile Val Met Thr Gln Pro Pro Leu Ser Ser Pro
 20 25 30
 Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser
 35 40 45
 Leu Val His Ser Asp Gly Asn Thr Tyr Leu Asn Trp Leu Gln Gln Arg
 50 55 60
 Pro Gly Gln Pro Pro Arg Leu Leu Ile Tyr Lys Phe Phe Arg Arg Leu
 65 70 75 80
 Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ala Gly Thr Asp Phe
 85 90 95
 Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr
 100 105 110
 Cys Met Gln Val Thr Gln Phe Pro His Thr Phe Gly Gln Gly Thr Arg
 115 120 125
 Leu Glu Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro
 130 135 140
 Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu
 145 150 155 160
 Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp
 165 170 175
 Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp
 180 185 190
 Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys
 195 200 205
 Ala Asp Tyr Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln
 210 215 220
 Gly Leu Ser Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
 225 230 235

<210> 7
 <211> 474
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Heavy chain of 5.9 human anti-CD40 antibody

<400> 7
 Met Gly Ser Thr Ala Ile Leu Ala Leu Leu Leu Ala Val Leu Gln Gly
 1 5 10 15

Val	Cys	Ala	Glu	Val	Gln	Leu	Val	Gln	Ser	Gly	Ala	Glu	Val	Lys	Lys
			20					25					30		
Pro	Gly	Glu	Ser	Leu	Lys	Ile	Ser	Cys	Lys	Gly	Ser	Gly	Tyr	Ser	Phe
		35					40					45			
Thr	Ser	Tyr	Trp	Ile	Gly	Trp	Val	Arg	Gln	Met	Pro	Gly	Lys	Gly	Leu
	50				55						60				
Glu	Trp	Met	Gly	Ile	Ile	Tyr	Pro	Gly	Asp	Ser	Asp	Thr	Arg	Tyr	Ser
65				70					75						80
Pro	Ser	Phe	Gln	Gly	Gln	Val	Thr	Ile	Ser	Ala	Asp	Lys	Ser	Ile	Ser
			85					90						95	
Thr	Ala	Tyr	Leu	Gln	Trp	Ser	Ser	Leu	Lys	Ala	Ser	Asp	Thr	Ala	Met
			100					105					110		
Tyr	Tyr	Cys	Ala	Arg	Gly	Thr	Ala	Ala	Gly	Arg	Asp	Tyr	Tyr	Tyr	Tyr
		115					120					125			
Tyr	Gly	Met	Asp	Val	Trp	Gly	Gln	Gly	Thr	Thr	Val	Thr	Val	Ser	Ser
	130				135						140				
Ala	Ser	Thr	Lys	Gly	Pro	Ser	Val	Phe	Pro	Leu	Ala	Pro	Ala	Ser	Lys
145					150					155					160
Ser	Thr	Ser	Gly	Gly	Thr	Ala	Ala	Leu	Gly	Cys	Leu	Val	Lys	Asp	Tyr
			165					170						175	
Phe	Pro	Glu	Pro	Val	Thr	Val	Ser	Trp	Asn	Ser	Gly	Ala	Leu	Thr	Ser
			180					185					190		
Gly	Val	His	Thr	Phe	Pro	Ala	Val	Leu	Gln	Ser	Ser	Gly	Leu	Tyr	Ser
		195					200					205			
Leu	Ser	Ser	Val	Val	Thr	Val	Pro	Ser	Ser	Ser	Leu	Gly	Thr	Gln	Thr
	210				215						220				
Tyr	Ile	Cys	Asn	Val	Asn	His	Lys	Pro	Ser	Asn	Thr	Lys	Val	Asp	Lys
225			230							235					240
Arg	Val	Glu	Pro	Lys	Ser	Cys	Asp	Lys	Thr	His	Thr	Cys	Pro	Pro	Cys
			245					250						255	
Pro	Ala	Pro	Glu	Leu	Leu	Gly	Gly	Pro	Ser	Val	Phe	Leu	Phe	Pro	Pro
			260					265					270		
Lys	Pro	Lys	Asp	Thr	Leu	Met	Ile	Ser	Arg	Thr	Pro	Glu	Val	Thr	Cys
		275					280					285			
Val	Val	Val	Asp	Val	Ser	His	Glu	Asp	Pro	Glu	Val	Lys	Phe	Asn	Trp
	290				295					300					
Tyr	Val	Asp	Gly	Val	Glu	Val	His	Asn	Ala	Lys	Thr	Lys	Pro	Arg	Glu
305					310					315					320
Glu	Gln	Tyr	Asn	Ser	Thr	Tyr	Arg	Val	Val	Ser	Val	Leu	Thr	Val	Leu
			325					330						335	
His	Gln	Asp	Trp	Leu	Asn	Gly	Lys	Glu	Tyr	Lys	Cys	Lys	Val	Ser	Asn
			340					345					350		
Lys	Ala	Leu	Pro	Ala	Pro	Ile	Glu	Lys	Thr	Ile	Ser	Lys	Ala	Lys	Gly
		355					360					365			
Gln	Pro	Arg	Glu	Pro	Gln	Val	Tyr	Thr	Leu	Pro	Pro	Ser	Arg	Glu	Glu
	370				375					380					
Met	Thr	Lys	Asn	Gln	Val	Ser	Leu	Thr	Cys	Leu	Val	Lys	Gly	Phe	Tyr
385				390						395					400
Pro	Ser	Asp	Ile	Ala	Val	Glu	Trp	Glu	Ser	Asn	Gly	Gln	Pro	Glu	Asn
			405					410						415	
Asn	Tyr	Lys	Thr	Thr	Pro	Pro	Val	Leu	Asp	Ser	Asp	Gly	Ser	Phe	Phe
			420					425					430		
Leu	Tyr	Ser	Lys	Leu	Thr	Val	Asp	Lys	Ser	Arg	Trp	Gln	Gln	Gly	Asn
		435					440					445			
Val	Phe	Ser	Cys	Ser	Val	Met	His	Glu	Ala	Leu	His	Asn	His	Tyr	Thr
	450				455						460				
Gln	Lys	Ser	Leu	Ser	Leu	Ser	Pro	Gly	Lys						
465					470										

<210> 8

<211> 474

<212> PRT

<213> Artificial Sequence

<220>

<223> Heavy chain of variant of 5.9 human anti-CD40
antibody

<400> 8

Met	Gly	Ser	Thr	Ala	Ile	Leu	Ala	Leu	Leu	Leu	Ala	Val	Leu	Gln	Gly	1	5	10	15
Val	Cys	Ala	Glu	Val	Gln	Leu	Val	Gln	Ser	Gly	Ala	Glu	Val	Lys	Lys	20	25	30	
Pro	Gly	Glu	Ser	Leu	Lys	Ile	Ser	Cys	Lys	Gly	Ser	Gly	Tyr	Ser	Phe	35	40	45	
Thr	Ser	Tyr	Trp	Ile	Gly	Trp	Val	Arg	Gln	Met	Pro	Gly	Lys	Gly	Leu	50	55	60	
Glu	Trp	Met	Gly	Ile	Ile	Tyr	Pro	Gly	Asp	Ser	Asp	Thr	Arg	Tyr	Ser	65	70	75	80
Pro	Ser	Phe	Gln	Gly	Gln	Val	Thr	Ile	Ser	Ala	Asp	Lys	Ser	Ile	Ser	85	90	95	
Thr	Ala	Tyr	Leu	Gln	Trp	Ser	Ser	Leu	Lys	Ala	Ser	Asp	Thr	Ala	Met	100	105	110	
Tyr	Tyr	Cys	Ala	Arg	Gly	Thr	Ala	Ala	Gly	Arg	Asp	Tyr	Tyr	Tyr	Tyr	115	120	125	
Tyr	Gly	Met	Asp	Val	Trp	Gly	Gln	Gly	Thr	Thr	Val	Thr	Val	Ser	Ser	130	135	140	
Ala	Ser	Thr	Lys	Gly	Pro	Ser	Val	Phe	Pro	Leu	Ala	Pro	Ser	Ser	Lys	145	150	155	160
Ser	Thr	Ser	Gly	Gly	Thr	Ala	Ala	Leu	Gly	Cys	Leu	Val	Lys	Asp	Tyr	165	170	175	
Phe	Pro	Glu	Pro	Val	Thr	Val	Ser	Trp	Asn	Ser	Gly	Ala	Leu	Thr	Ser	180	185	190	
Gly	Val	His	Thr	Phe	Pro	Ala	Val	Leu	Gln	Ser	Ser	Gly	Leu	Tyr	Ser	195	200	205	
Leu	Ser	Ser	Val	Val	Thr	Val	Pro	Ser	Ser	Ser	Leu	Gly	Thr	Gln	Thr	210	215	220	
Tyr	Ile	Cys	Asn	Val	Asn	His	Lys	Pro	Ser	Asn	Thr	Lys	Val	Asp	Lys	225	230	235	240
Arg	Val	Glu	Pro	Lys	Ser	Cys	Asp	Lys	Thr	His	Thr	Cys	Pro	Pro	Cys	245	250	255	
Pro	Ala	Pro	Glu	Leu	Leu	Gly	Gly	Pro	Ser	Val	Phe	Leu	Phe	Pro	Pro	260	265	270	
Lys	Pro	Lys	Asp	Thr	Leu	Met	Ile	Ser	Arg	Thr	Pro	Glu	Val	Thr	Cys	275	280	285	
Val	Val	Val	Asp	Val	Ser	His	Glu	Asp	Pro	Glu	Val	Lys	Phe	Asn	Trp	290	295	300	
Tyr	Val	Asp	Gly	Val	Glu	Val	His	Asn	Ala	Lys	Thr	Lys	Pro	Arg	Glu	305	310	315	320
Glu	Gln	Tyr	Asn	Ser	Thr	Tyr	Arg	Val	Val	Ser	Val	Leu	Thr	Val	Leu	325	330	335	
His	Gln	Asp	Trp	Leu	Asn	Gly	Lys	Glu	Tyr	Lys	Cys	Lys	Val	Ser	Asn	340	345	350	
Lys	Ala	Leu	Pro	Ala	Pro	Ile	Glu	Lys	Thr	Ile	Ser	Lys	Ala	Lys	Gly	355	360	365	
Gln	Pro	Arg	Glu	Pro	Gln	Val	Tyr	Thr	Leu	Pro	Pro	Ser	Arg	Glu	Glu	370	375	380	
Met	Thr	Lys	Asn	Gln	Val	Ser	Leu	Thr	Cys	Leu	Val	Lys	Gly	Phe	Tyr	385	390	395	400
Pro	Ser	Asp	Ile	Ala	Val	Glu	Trp	Glu	Ser	Asn	Gly	Gln	Pro	Glu	Asn	405	410	415	
Asn	Tyr	Lys	Thr	Thr	Pro	Pro	Val	Leu	Asp	Ser	Asp	Gly	Ser	Phe	Phe	420	425	430	
Leu	Tyr	Ser	Lys	Leu	Thr	Val	Asp	Lys	Ser	Arg	Trp	Gln	Gln	Gly	Asn	435	440	445	
Val	Phe	Ser	Cys	Ser	Val	Met	His	Glu	Ala	Leu	His	Asn	His	Tyr	Thr	450	455	460	
Gln	Lys	Ser	Leu	Ser	Leu	Ser	Pro	Gly	Lys							465	470		

<210> 9
 <211> 612
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)...(612)

<221> misc_feature
 <222> (0)...(0)
 <223> Coding sequence for short isoform of human CD40

<400> 9
 atg gtt cgt ctg cct ctg cag tgc gtc ctc tgg ggc tgc ttg ctg acc 48
 Met Val Arg Leu Pro Leu Gln Cys Val Leu Trp Gly Cys Leu Leu Thr
 1 5 10 15
 gct gtc cat cca gaa cca ccc act gca tgc aga gaa aaa cag tac cta 96
 Ala Val His Pro Glu Pro Pro Thr Ala Cys Arg Glu Lys Gln Tyr Leu
 20 25 30
 ata aac agt cag tgc tgt tct ttg tgc cag cca gga cag aaa ctg gtg 144
 Ile Asn Ser Gln Cys Cys Ser Leu Cys Gln Pro Gly Gln Lys Leu Val
 35 40 45
 agt gac tgc aca gag ttc act gaa acg gaa tgc ctt cct tgc ggt gaa 192
 Ser Asp Cys Thr Glu Phe Thr Glu Thr Glu Cys Leu Pro Cys Gly Glu
 50 55 60
 agc gaa ttc cta gac acc tgg aac aga gag aca cac tgc cac cag cac 240
 Ser Glu Phe Leu Asp Thr Trp Asn Arg Glu Thr His Cys His Gln His
 65 70 75 80
 aaa tac tgc gac ccc aac cta ggg ctt cgg gtc cag cag aag ggc acc 288
 Lys Tyr Cys Asp Pro Asn Leu Gly Leu Arg Val Gln Gln Lys Gly Thr
 85 90 95
 tca gaa aca gac acc atc tgc acc tgt gaa gaa ggc tgg cac tgt acg 336
 Ser Glu Thr Asp Thr Ile Cys Thr Cys Glu Glu Gly Trp His Cys Thr
 100 105 110
 agt gag gcc tgt gag agc tgt gtc ctg cac cgc tca tgc tcg ccc ggc 384
 Ser Glu Ala Cys Glu Ser Cys Val Leu His Arg Ser Cys Ser Pro Gly
 115 120 125
 ttt ggg gtc aag cag att gct aca ggg gtt tct gat acc atc tgc gag 432
 Phe Gly Val Lys Gln Ile Ala Thr Gly Val Ser Asp Thr Ile Cys Glu
 130 135 140
 ccc tgc cca gtc ggc ttc ttc tcc aat gtg tca tct gct ttc gaa aaa 480
 Pro Cys Pro Val Gly Phe Phe Ser Asn Val Ser Ser Ala Phe Glu Lys
 145 150 155 160
 tgt cac cct tgg aca agg tcc cca gga tcg gct gag agc cct ggt ggt 528
 Cys His Pro Trp Thr Arg Ser Pro Gly Ser Ala Glu Ser Pro Gly Gly
 165 170 175
 gat ccc cat cat ctt cgg gat cct gtt tgc cat cct ctt ggt gct ggt 576
 Asp Pro His His Leu Arg Asp Pro Val Cys His Pro Leu Gly Ala Gly
 180 185 190
 ctt tat caa aaa ggt ggc caa gaa gcc aac caa taa 612
 Leu Tyr Gln Lys Gly Gly Gln Glu Ala Asn Gln *
 195 200

<210> 10
 <211> 203
 <212> PRT
 <213> Homo sapiens

<400> 10
 Met Val Arg Leu Pro Leu Gln Cys Val Leu Trp Gly Cys Leu Leu Thr
 1 5 10 15
 Ala Val His Pro Glu Pro Pro Thr Ala Cys Arg Glu Lys Gln Tyr Leu
 20 25 30
 Ile Asn Ser Gln Cys Cys Ser Leu Cys Gln Pro Gly Gln Lys Leu Val
 35 40 45
 Ser Asp Cys Thr Glu Phe Thr Glu Thr Glu Cys Leu Pro Cys Gly Glu
 50 55 60
 Ser Glu Phe Leu Asp Thr Trp Asn Arg Glu Thr His Cys His Gln His
 65 70 75 80
 Lys Tyr Cys Asp Pro Asn Leu Gly Leu Arg Val Gln Gln Lys Gly Thr
 85 90 95
 Ser Glu Thr Asp Thr Ile Cys Thr Cys Glu Glu Gly Trp His Cys Thr
 100 105 110
 Ser Glu Ala Cys Glu Ser Cys Val Leu His Arg Ser Cys Ser Pro Gly
 115 120 125
 Phe Gly Val Lys Gln Ile Ala Thr Gly Val Ser Asp Thr Ile Cys Glu
 130 135 140
 Pro Cys Pro Val Gly Phe Phe Ser Asn Val Ser Ser Ala Phe Glu Lys
 145 150 155 160
 Cys His Pro Trp Thr Arg Ser Pro Gly Ser Ala Glu Ser Pro Gly Gly
 165 170 175
 Asp Pro His His Leu Arg Asp Pro Val Cys His Pro Leu Gly Ala Gly
 180 185 190
 Leu Tyr Gln Lys Gly Gly Gln Glu Ala Asn Gln
 195 200

<210> 11
 <211> 834
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)...(834)
 <221> misc_feature
 <222> (0)...(0)
 <223> Coding sequence for long isoform of human CD40

<400> 11
 atg gtt cgt ctg cct ctg cag tgc gtc ctc tgg ggc tgc ttg ctg acc 48
 Met Val Arg Leu Pro Leu Gln Cys Val Leu Trp Gly Cys Leu Leu Thr
 1 5 10 15
 gct gtc cat cca gaa cca ccc act gca tgc aga gaa aaa cag tac cta 96
 Ala Val His Pro Glu Pro Pro Thr Ala Cys Arg Glu Lys Gln Tyr Leu
 20 25 30
 ata aac agt cag tgc tgt tct ttg tgc cag cca gga cag aaa ctg gtg 144
 Ile Asn Ser Gln Cys Cys Ser Leu Cys Gln Pro Gly Gln Lys Leu Val
 35 40 45
 agt gac tgc aca gag ttc act gaa acg gaa tgc ctt cct tgc ggt gaa 192
 Ser Asp Cys Thr Glu Phe Thr Glu Thr Glu Cys Leu Pro Cys Gly Glu
 50 55 60
 agc gaa ttc cta gac acc tgg aac aga gag aca cac tgc cac cag cac 240

Ser 65	Glu	Phe	Leu	Asp	Thr 70	Trp	Asn	Arg	Glu	Thr 75	His	Cys	His	Gln	His 80		
aaa Lys	tac Tyr	tgc Cys	gac Asp	ccc Pro	aac Asn	cta Leu	ggg Gly	ctt Leu	cgg Arg	gtc Val	cag Gln	cag Gln	aag Lys	ggc Gly	acc Thr	288	
tca Ser	gaa Glu	aca Thr	gac Asp	acc Thr	atc Ile	tgc Cys	acc Thr	tgt Cys	gaa Glu	gaa Glu	ggc Gly	tgg Trp	cac His	tgt Cys	acg Thr	336	
agt Ser	gag Glu	gcc Ala	tgt Cys	gag Glu	agc Ser	tgt Cys	gtc Val	ctg Leu	cac His	cgc Arg	tca Ser	tgc Cys	tcg Ser	ccc Pro	ggc Gly	384	
ttt Phe	ggg Gly	gtc Val	aag Lys	cag Gln	att Ile	gct Ala	aca Thr	ggg Gly	gtt Val	tct Ser	gat Asp	acc Thr	atc Ile	tgc Cys	gag Glu	432	
ccc Pro	tgc Cys	cca Pro	gtc Val	ggc Gly	ttc Phe	ttc Phe	tcc Ser	aat Asn	gtg Val	tca Ser	tct Ser	gct Ala	ttc Phe	gaa Glu	aaa Lys	480	
tgt Cys	cac His	cct Pro	tgg Trp	aca Thr	agc Ser	tgt Cys	gag Glu	acc Thr	aaa Lys	gac Asp	ctg Leu	gtt Val	gtg Val	caa Gln	cag Gln	528	
gca Ala	ggc Gly	aca Thr	aac Asn	aag Lys	act Thr	gat Asp	gtt Val	gtc Val	tgt Cys	ggc Gly	ccc Pro	cag Gln	gat Asp	cgg Arg	ctg Leu	576	
aga Arg	gcc Ala	ctg Leu	gtg Val	gtg Val	atc Ile	ccc Pro	atc Ile	atc Ile	ttc Phe	ggg Gly	atc Ile	ctg Leu	ttt Phe	gcc Ala	atc Ile	624	
ctc Leu	ttg Leu	gtg Val	ctg Leu	gtc Val	ttt Phe	atc Ile	aaa Lys	aag Lys	gtg Val	gcc Ala	aag Lys	aag Lys	cca Pro	acc Thr	aat Asn	672	
aag Lys	gcc Ala	ccc Pro	cac His	ccc Pro	aag Lys	cag Gln	gaa Glu	ccc Pro	cag Gln	gag Glu	atc Ile	aat Asn	ttt Phe	ccc Pro	gac Asp	720	
gat Asp	ctt Leu	cct Pro	ggc Gly	tcc Ser	aac Asn	act Thr	gct Ala	gct Ala	cca Pro	gtg Val	cag Gln	gag Glu	act Thr	tta Leu	cat His	768	
gga Gly	tgc Cys	caa Gln	ccg Pro	gtc Val	acc Thr	cag Gln	gag Glu	gat Asp	ggc Gly	aaa Lys	gag Glu	agt Ser	cgc Arg	atc Ile	tca Ser	816	
gtg Val	cag Gln	gag Glu	aga Arg	cag Gln	tga *											834	

<210> 12
 <211> 277
 <212> PRT
 <213> Homo sapiens

<400> 12
 Met Val Arg Leu Pro Leu Gln Cys Val Leu Trp Gly Cys Leu Leu Thr
 1 5 10 15
 Ala Val His Pro Glu Pro Pro Thr Ala Cys Arg Glu Lys Gln Tyr Leu
 20 25 30

Ile	Asn	Ser	Gln	Cys	Cys	Ser	Leu	Cys	Gln	Pro	Gly	Gln	Lys	Leu	Val
		35					40					45			
Ser	Asp	Cys	Thr	Glu	Phe	Thr	Glu	Thr	Glu	Cys	Leu	Pro	Cys	Gly	Glu
	50					55					60				
Ser	Glu	Phe	Leu	Asp	Thr	Trp	Asn	Arg	Glu	Thr	His	Cys	His	Gln	His
65				70					75					80	
Lys	Tyr	Cys	Asp	Pro	Asn	Leu	Gly	Leu	Arg	Val	Gln	Gln	Lys	Gly	Thr
			85						90					95	
Ser	Glu	Thr	Asp	Thr	Ile	Cys	Thr	Cys	Glu	Glu	Gly	Trp	His	Cys	Thr
			100					105					110		
Ser	Glu	Ala	Cys	Glu	Ser	Cys	Val	Leu	His	Arg	Ser	Cys	Ser	Pro	Gly
		115					120					125			
Phe	Gly	Val	Lys	Gln	Ile	Ala	Thr	Gly	Val	Ser	Asp	Thr	Ile	Cys	Glu
	130					135					140				
Pro	Cys	Pro	Val	Gly	Phe	Phe	Ser	Asn	Val	Ser	Ser	Ala	Phe	Glu	Lys
145					150					155				160	
Cys	His	Pro	Trp	Thr	Ser	Cys	Glu	Thr	Lys	Asp	Leu	Val	Val	Gln	Gln
				165					170					175	
Ala	Gly	Thr	Asn	Lys	Thr	Asp	Val	Val	Cys	Gly	Pro	Gln	Asp	Arg	Leu
			180					185					190		
Arg	Ala	Leu	Val	Val	Ile	Pro	Ile	Ile	Phe	Gly	Ile	Leu	Phe	Ala	Ile
		195					200					205			
Leu	Leu	Val	Leu	Val	Phe	Ile	Lys	Lys	Val	Ala	Lys	Lys	Pro	Thr	Asn
	210					215					220				
Lys	Ala	Pro	His	Pro	Lys	Gln	Glu	Pro	Gln	Glu	Ile	Asn	Phe	Pro	Asp
225					230					235				240	
Asp	Leu	Pro	Gly	Ser	Asn	Thr	Ala	Ala	Pro	Val	Gln	Glu	Thr	Leu	His
				245					250					255	
Gly	Cys	Gln	Pro	Val	Thr	Gln	Glu	Asp	Gly	Lys	Glu	Ser	Arg	Ile	Ser
			260					265					270		
Val	Gln	Glu	Arg	Gln											
			275												